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Computer Use Study

Supermarket operators with 1-20 stores



Computer Use Study

**A Report on the State of Computer
Technology in Supermarket Companies
with One to Twenty Stores**

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The Food Marketing Institute (FMI) is a nonprofit association conducting programs in research, education, and public affairs on behalf its 1,500 members -- food retailers and wholesalers and their customers in the United States and overseas. FMI's domestic member companies operate more than 17,000 retail food stores with a combined annual sales volume of \$180 billion -- half of all grocery sales in the United States. More than three-fourths of the FMI's membership is composed of independent supermarket operators or small regional firms. Its international membership includes more than 150 members from 43 nations.

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EXECUTIVE SUMMARY

The idea for the *Computer Use Study* came about in response to the increasing use of computer technology by independent supermarket operators and small regional firms. For many years FMI has examined computers and related topics in the larger companies (annual sales greater than \$50 million) in the *Information Systems Study*. As hardware grew more compact, software more accessible, and costs declined, firms with limited human and financial resources found that they could employ computers to bolster their efficiency.

The pervasiveness of computers in the supermarket industry is evidenced by the fact that over four-fifths of responding companies used personal computers and just over 35 percent worked with mini computers. Forty-eight percent used only PCs, 3.4 percent used only minis, almost 32 percent employed both, and 16.7 percent said they used neither.

IBM PCs were most dominant with NCR the second most popular choice. Overall, the typical company owned five personal computers and did not lease any. Obviously, the number of PCs owned varied with the company size, ranging from two in the smallest firms (annual sales less than \$10 million) to 19 in the largest (sales greater than \$100 million).

About half of the firms purchased their PC software from a retail computer store; a little over one-third from a computer manufacturer and more than a quarter from their wholesaler. Just about half of the responding companies utilized integrated software, which can run several different applications.

Personal computers require data storage, retrieval, and back-up systems. Over 90 percent of the firms surveyed stored their PC data on hard-disks. Four-fifths of responding companies used diskettes and just over 34 percent utilized magnetic tape to back-up their records. Data security systems were employed by about one-third of the respondents and 22.4 percent had a security system for their PC hardware.

As anticipated, the incidence of multiple technologies increases with company size. For example, only six percent of the firms with annual sales less than \$10 million worked with both PCs and mini computers compared with over two-thirds of those companies with annual sales greater than \$30 million.

As with personal computers, IBM and NCR were the first and second most popular brands of minis, respectively. Over 58 percent of the responding firms used integrated software with their minis and just over 60 percent employed

a data security system. The average mini computer system was 3.6 years old.

Only 11.7 percent of the responding companies were involved with local area networks. A little more than one-third linked their PCs to a mainframe or mini computer. As would be expected, such technology is more likely in larger firms.

The study revealed that, on average, 0.36 percent of sales were budgeted for the information functions in 1986 but 0.43 percent was actually spent.

Finally, the study showed that almost 38 percent of companies surveyed had reviewed their disaster plan in the last twelve months. Sixty-four percent used a remote cold sight and sixteen percent a remote hot sight.

METHODOLOGY

The FMI *Computer Use* questionnaire was mailed to FMI member companies with one to 20 stores. Usable questionnaires were returned by 204 companies. A copy of the questionnaire is included in the back of the report. The survey results have been tabulated by annual company sales.

USE OF COMPUTERS

Table 1 shows the percentage of companies using personal computers (PCs) and mini computers (minis). Of all companies surveyed, 79.9 percent used personal computers, 35.3 percent used mini computers, and 31.9 percent used both. Only 16.7 percent indicated they used neither. Overall, about half the companies (48.0 percent) used only personal computers. The use of PCs increased with the size of the company: 71.8 percent of the firms with less than \$10 million in annual sales; 92.9 percent of those in the \$31 to \$100 million sales category and 100 percent of those with more than \$100 million in annual sales. Almost two-thirds of the small firms said they used only personal computers compared with 44.3 percent of those with \$10 to \$30 million in annual sales and less than 30 percent for those annual sales greater than \$30 million. A reverse situation is found among those companies using both PCs and minis; the larger concerns have a much greater use of both technologies than the smaller firms.

TABLE 1
PERCENTAGE OF COMPANIES USING SMALL COMPUTERS

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	204	85	61	42	16
USE PERSONAL COMPUTERS	79.9	71.8	77.0	92.9	100.0
USE MINI COMPUTERS	35.3	5.9	39.3	73.8	75.0
USE PERSONAL COMPUTERS ONLY	48.0	65.9	44.3	26.2	25.0
USE MINI COMPUTERS ONLY	3.4	-	6.6	7.1	-
USE BOTH	31.9	5.9	32.8	66.7	75.0
USE NEITHER	16.7	28.2	16.4	-	-

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

PERSONAL COMPUTERS

Participants were asked several questions about their personal computers. As shown in Table 2, IBM made a slight majority (53.3 percent) of the PCs in the companies surveyed. More striking is that IBM hardware was used by 78.3 percent of those companies with over \$100 million in annual sales. This percentage declined considerably in the smaller concerns: around 45 percent of PCs in firms with annual sales of \$10-\$100 million and 22.7 percent of the PCs in the smallest firms were made by IBM.

For all companies, NCR PCs were in second place at 17.0 percent. IBM clones and Compaqs were in third and fourth place respectively. NCR was the most popular brand in those companies with annual sales under \$10 million (31.1 percent), with IBM in second place (22.7 percent) and Apple in third at 10.1 percent.

TABLE 2
MANUFACTURERS OF PERSONAL COMPUTERS CURRENTLY IN USE

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL COMPUTERS	858	119	194	235	300
NCR	17.0	31.1	15.5	20.0	10.0
APPLE	7.6	10.1	3.1	1.7	-
IBM	53.3	22.7	43.3	45.1	78.3
RADIO SHACK/TANDY	2.7	2.6	2.1	4.3	-
TEXAS INSTRUMENTS	1.5	.8	-	5.1	-
ITT	1.2	5.0	1.5	.4	-
LEADING EDGE	1.2	-	2.1	.9	1.3
COMPAQ	3.9	3.4	7.2	2.6	2.7
TOSHIBA	.4	1.7	-	.4	-
IBM CLONE	4.6	6.7	6.3	1.3	-
DIGITAL/DEC	.7	.6	-	.4	-
ZENITH	2.3	2.7	10.3	-	-
OTHER	8.3	2.6	2.3	11.5	7.7

NOTE: UNWEIGHTED DATA

Table 3 indicates that the vast majority (90.7 percent) of companies responding use a hard disk for storage on their personal computers. A lower percentage of the small firms used hard disk, about 87 percent for those with annual sales less than \$31 million, compared with over 97 percent for those in the \$31 to \$100 million bracket and all of those firms with sales over \$100 million. As shown in Table 4, a 20 megabyte hard disk was the most popular of the sizes shown (26.1 percent). A higher percentage of the hard disks in the larger companies were 20 megabytes, while the largest percentage of disks in the smallest companies were 10 megabytes. Interestingly, almost one-third of the respondents said they used a size other than those shown.

TABLE 3

PERCENTAGE OF COMPANIES USING HARD DISKS FOR STORAGE ON PERSONAL COMPUTERS

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	162	60	4	39	16
USE HARD DISKS	90.7	86.7	87.2	97.4	100.0
DO NOT USE HARD DISKS	9.3	13.3	12.8	2.6	

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

TABLE 4

HARD DISK SIZE

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL COMPANIES	160	63	30	33	16
TOTAL HARD DISKS	276	38	132	51	66
10 MEGABYTES	13.2	73.0	1.9	21.9	9.1
20 MEGABYTES	26.1	13.8	13.1	42.5	48.5
30 MEGABYTES	8.3	13.9	6.0	9.6	9.1
40 MEGABYTES	14.6	13.9	13.9	20.5	9.1
60 MEGABYTES	5.5	8.6	7	2.7	19.7
OTHER	32.5	27.8	60.3	2.7	4.5

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

As shown in Table 5, the average company owns five personal computers and does not lease any. As would be expected, the number of PCs owned varies in relation to company size in terms of annual sales. The largest companies owned 19 compared with two in the smallest companies.

TABLE 5
AVERAGE NUMBER OF PERSONAL COMPUTERS CURRENTLY OWNED/LEASED

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	161	60	47	38	16
OWNED	5	2	4	7	19
TOTAL	161	60	47	38	16
LEASED	0	0	1	0	1

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

Table 6 shows that just about half (49.1 percent) of the companies surveyed purchased PC software from a retail computer store. About a third (33.5 percent) obtained it directly from a computer manufacturer and another 27.3 percent said they purchased it from a food wholesaler. Smaller percentages of companies purchased software from wholesale computer stores or mail order computer stores.

TABLE 6
WHERE SOFTWARE FOR PERSONAL COMPUTERS IS PURCHASED **

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	161	60	46	39	16
RETAIL COMPUTER STORE	49.1	38.3	52.2	53.8	68.8
DIRECTLY FROM COMPUTER MANUFACTURER	33.5	30.0	28.3	38.5	50.0
FOOD WHOLESALER	27.3	21.7	32.6	35.9	12.5
WHOLESALE COMPUTER STORE	9.9	11.7	2.2	13.4	12.5
MAIL ORDER COMPUTER STORE	8.1	10.0	6.5	5.1	12.5
OTHER	13.0	11.7	19.6	10.3	6.3

** MULTIPLE RESPONSES ACCEPTED

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

As indicated in Table 7, 92.6 percent of companies surveyed had some type of back-up system for their PCs. Diskettes were the major variety, used by 79.9 percent of companies surveyed (Table 8). Magnetic tape was used by 34.2 percent and floppy tape by 5.4 percent.

TABLE 7
PERCENTAGE OF COMPANIES USING BACK UP SYSTEM ON PERSONAL COMPUTERS

	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)				
	TOTAL	\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	162	60	47	39	16
USE BACK UP SYSTEM	92.6	93.3	93.6	92.3	87.5
DO NOT USE BACK UP SYSTEM	7.4	6.7	6.4	7.7	12.5

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

TABLE 8
TYPE OF BACKUP SYSTEM USED FOR PERSONAL COMPUTERS **

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	149	56	44	36	13
DISKETTES	79.9	80.4	79.5	77.8	84.6
MAGNETIC TAPE	34.2	28.6	31.8	18.9	53.8
FLOPPY TAPE	5.4	3.6	6.8	5.6	7.7
CORE MEMORY	2.7	-	2.3	-	-
OTHER	4.7	3.4	6.8	2.8	-

** MULTIPLE RESPONSES ACCEPTED

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

Overall, not quite half of the companies surveyed used integrated software (Table 9). Integrated software means that several different applications can be run on the same software. The smallest companies made the greatest use of integrated software while a smaller percentage of the larger firms used it. For example, only 26.7 percent of the companies with over \$100 million in annual sales used integrated software while 53.8 percent of the smallest firms said it was employed in their operations.

TABLE 9
PERCENTAGE OF COMPANIES USING INTEGRATED SOFTWARE ON PERSONAL COMPUTERS

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	147	52	44	36	15
USE INTEGRATED SOFTWARE	48.3	53.8	54.5	41.7	26.7
DO NOT USE INTEGRATED SOFTWARE	51.7	46.2	45.5	58.3	73.3

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

As shown in Table 10, Local Area Networks (LANs) were utilized by only 11.7 percent of companies surveyed. A little more than one third (34.8 percent) of companies surveyed had PCs linked to a mainframe or a mini computer (Table 11). This is similar to figures for larger companies. In 1987, 34.4 percent of companies responding to the FMI *Information Systems Study, 1987* indicated advanced use of PCs linked to mainframes. Another 45.2 percent said they were in a stage of limited utilization.* As would be expected for respondents in the *Computer Use Study*, more PCs were linked to mainframes in the larger companies. While 81.3 percent of those companies with over \$100 million in annual sales reported use of this technology, only 12.3 percent of the smallest firms indicated its use.

TABLE 10
PERCENTAGE OF COMPANIES USING LOCAL AREA NETWORK (LAN)
TO CONNECT PERSONAL COMPUTERS

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	162	60	47	39	16
USE LAN	11.7	5.0	23.4	10.3	6.3
DO NOT USE LAN	88.3	95.0	76.6	89.7	93.8

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

TABLE 11
PERCENTAGE OF COMPANIES WITH PERSONAL COMPUTERS LINKED
TO MAINFRAME OR MINI COMPUTER

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	155	57	43	39	16
HAVE LINKED PCS	34.8	12.3	27.9	56.4	81.3
DO NOT HAVE LINKED PCS	65.2	87.7	72.1	43.6	18.8

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

* The FMI *Information Systems Study* examines those companies with \$50 million or greater in annual sales.

Table 12 examines the transfer of data between personal computers and mini computers. Of those companies with linked PCs, 68.5 percent said they transfer data both to and from the mainframe and/or minicomputer. Another 16.7 percent said they transfer data only from the mainframe and/or mini and 7.4 percent said they transfer data only to mainframe and/or mini. Only 7.4 percent said they had no data transfer at all.

TABLE 12

PERCENTAGE OF COMPANIES TRANSFERRING DATA BETWEEN PERSONAL COMPUTER AND MINI COMPUTER

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	54	7	12	22	13
TRANSFER FROM THE MAINFRAME AND/OR MINI ONLY	16.7	14.3	16.7	18.2	15.4
TRANSFER TO THE MAINFRAME AND/OR MINI ONLY	7.4	14.3	16.7	4.5	-
TRANSFER IN BOTH DIRECTIONS	68.5	71.4	50.0	72.7	76.9
NO DATA TRANSFER AT ALL	7.4	-	16.7	4.5	7.7

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

As shown in Table 13, about one-third of companies surveyed employed a data security system for their PCs. Somewhat less, 22.4 percent had a security system for their PC hardware (Table 14).

TABLE 13

PERCENTAGE OF COMPANIES WITH DATA SECURITY SYSTEM FOR PERSONAL COMPUTERS

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	159	60	45	38	16
HAVE DATA SECURITY SYSTEM	32.1	30.0	33.3	34.2	31.3
DO NOT HAVE DATA SECURITY SYSTEM	67.9	70.0	66.7	65.8	68.8

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

TABLE 14
PERCENTAGE OF COMPANIES WITH SECURITY SYSTEM FOR
PERSONAL COMPUTER HARDWARE

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	152	57	41	39	15
HAVE SECURITY SYSTEM	22.4	17.5	22.0	33.3	13.3
DO NOT HAVE SECURITY SYSTEM	77.6	82.5	78.0	66.7	86.7

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

MINI COMPUTERS

As with personal computers, IBM was the manufacturer preferred by most companies surveyed for this report (Table 15) and NCR was in second place. Of those mini computers currently in use among companies surveyed, 38.6 percent were made by IBM and 28.6 percent by NCR. Table 16 reveals that, of those companies with a mini computer, 78.3 percent owned it and 21.7 percent leased it. These numbers are similar when the data are broken out by company sales.

TABLE 15
MANUFACTURERS OF MINI COMPUTERS CURRENTLY IN USE

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	70	5	23	30	12
IBM	38.6	-	47.8	36.7	41.7
NCR	28.6	20.0	30.4	33.3	16.7
DIGITAL/DEC	5.7	-	-	10.0	8.3
HEWLETT PACKARD	4.3	-	-	6.7	8.3
TEXAS INSTRUMENTS	7.9	-	4.3	3.3	-
APPLE	1.4	20.0	-	-	-
OTHER	18.6	60.0	17.4	10.0	25.0

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

TABLE 16
PERCENTAGE OF COMPANIES OWNING/LEASING MINI COMPUTER

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	69	5	23	29	12
OWN MINI COMPUTER	78.3	80.0	82.6	72.4	83.3
LEASE MINI COMPUTER	21.7	20.0	17.4	27.6	16.7

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

Tables 17 and 18 discuss the number of megabytes used in mini computers versus the number actually available. The amount used varied evenly across the responding companies. For example, 15.6 percent said they used less than 20 megabytes while another 15.6 percent used over 300 megabytes. When looking at the actual number of megabytes available, Table 18 shows that almost one-third of the responding companies had between 151 and 300 megabytes while Table 17 indicates that only 15.6 percent said they actually used that many. A similar situation is found in the case of those companies utilizing minis with over 300 megabytes: 24.5 percent had that capacity while only 15.6 percent used that amount.

TABLE 17
USED NUMBER OF MEGABYTES IN MINI COMPUTER

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	45	2	15	18	10
LESS THAN 20	15.6		13.3	16.7	20.0
20 - 50	20.0		33.3	11.1	-
51 - 100	15.6		20.0	22.2	-
101 - 150	17.8		20.0	22.2	10.0
151 - 300	15.6		6.7	16.7	30.0
OVER 300	15.6		6.7	11.1	40.0

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

TABLE 18
ACTUAL NUMBER OF MEGABYTES IN MINI COMPUTER

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	49	4	16	20	9
LESS THAN 20	8.2	-	6.3	5.0	22.2
20 - 50	18.4	25.0	31.3	5.0	-
51 - 100	6.1	25.0	12.5	-	-
101 - 150	10.2	-	12.5	15.0	-
151 - 300	32.7	-	31.3	50.0	11.1
OVER 300	24.5	-	6.3	25.0	66.7

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

Integrated software was used on mini computers by 58.2 percent of participating companies (Table 19). As with PCs and integrated software, a greater percentage of the smaller companies used it than did the larger ones. Three-quarters of the smallest companies employed this technology compared with 60 percent of those in the \$31 to \$100 annual sales bracket.

TABLE 19
PERCENTAGE OF COMPANIES USING INTEGRATED SOFTWARE
ON MINI COMPUTERS

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	67	4	21	30	12
USE INTEGRATED SOFTWARE	58.2	75.0	57.1	60.0	50.0
DO NOT USE INTEGRATED SOFTWARE	41.8	25.0	42.9	40.0	50.0

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

As shown in Table 20, the average mini computer system was 3.6 years old. Just over 60 percent of companies surveyed employed a data security system for their mini computer(s) (Table 21), while only 40 percent utilized such a system for their mini computer hardware (Table 22).

TABLE 20
AVERAGE AGE OF MINI COMPUTER SYSTEM

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	67	4	23	28	12
AVERAGE AGE	3.6	3.3	4.7	2.8	3.3

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

TABLE 21
PERCENTAGE OF COMPANIES WITH DATA SECURITY SYSTEM FOR
MINI COMPUTERS

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	66	4	21	29	12
HAVE DATA SECURITY SYSTEM	60.6	50.0	47.6	69.0	66.7
DO NOT HAVE DATA SECURITY SYSTEM	39.4	50.0	52.4	31.0	33.3

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

TABLE 22
PERCENTAGE OF COMPANIES WITH SECURITY SYSTEM FOR
MINI COMPUTER HARDWARE

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	60	3	18	27	12
HAVE SECURITY SYSTEM	40.0		44.4	44.4	33.3
DO NOT HAVE SECURITY SYSTEM	60.0		55.6	55.6	66.7

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

BUDGETARY INFORMATION

For companies responding to this question, an average of 0.36 percent of sales were budgeted for information systems or functions in 1986 (Table 23). This is almost the same as the 0.38 percent reported for larger companies in the *Information Systems Study, 1987*. The actual amount spent in the most recent fiscal year was 0.43 percent (Table 24), again very similar to the 0.40 percent spent by the companies surveyed for the *Information Systems Study, 1987*.

TABLE 23

AVERAGE PERCENT OF NET COMPANY SALES BUDGETED FOR THE INFORMATION SYSTEMS FUNCTIONS OR DEPARTMENT FOR 1986

	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)				
	TOTAL	\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	28	2	8	11	7
AVERAGE PERCENT OF NET COMPANY SALES BUDGETED FOR IS	.36		.45	.15	.32

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

TABLE 24

ACTUAL INFORMATION SYSTEMS DOLLARS SPENT FOR THE MOST RECENTLY COMPLETED FISCAL YEAR AS A PERCENT OF NET COMPANY SALES

	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)				
	TOTAL	\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	11	2	9	13	7
DOLLARS SPENT AS A PERCENT OF SALES	.43		.67	.21	.31

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

DISASTER RECOVERY PLANS

As shown in Table 25, 37.7 percent of companies surveyed have a formal disaster recovery plan which has been reviewed in the past twelve months. This is very similar to the 35.2 percent reported in the *Information Systems Study, 1987*. Sixty-four percent of those companies use a remote cold sight, 16.0 percent use a remote hot sight, while none use a dual sight. This compares with the 30.0 percent of companies in the *IS study* who use a remote hot sight, 26.0 percent with a remote cold sight, and 20.0 percent with a dual sight. The disaster plan was tested in the past six months by 15.4 percent of the participants in this report, compared with 21.4 percent of the companies in the *IS study*. A hot sight exists only in case of a disaster. It contains computer equipment which receives no normal use other than periodic testing. The equipment is kept ready for use in the event of a disaster. A cold sight is an empty area which is kept ready for computer installation if a disaster should occur.

TABLE 25
FORMAL DISASTER RECOVERY PLAN

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	69	4	23	30	12
HAVE FORMAL DISASTER RECOVERY PLAN WHICH HAS BEEN REVIEWED IN PAST 12 MONTHS	37.7	-	43.5	43.3	25.0
TYPE OF DISASTER RECOVERY PLAN:					
TOTAL	25	0	10	12	3
REMOTE HOT SITE	16.0		30.0	-	
REMOTE COLD SITE	64.0		40.0	83.3	
DUAL SITE	-		-	-	
OTHER	20.0		30.0	16.7	
TOTAL	26	0	10	13	3
DISASTER RECOVERY PLAN TESTED IN LAST SIX MONTHS	15.4		10.0	15.4	

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

COMPUTER PERSONNEL

Table 26 shows an average of 8.2 employees worked with computers at the headquarters level. At the store level, an average of 7.9 people had hands on experience with computers. As expected, this number varies considerably depending on the company size. Over half the companies surveyed (53.1 percent) said that computerization has provided 3.6 new job opportunities (Tables 27 and 28).

TABLE 26
AVERAGE NUMBER OF PERSONNEL WITH HANDS ON USE OF COMPUTERS

		TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
	TOTAL	\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100

HEADQUARTERS					

TOTAL	116	21	38	41	16
AVERAGE	8.2	3.1	4.7	8.9	21.5
STORE					

TOTAL	116	44	35	26	11
AVERAGE	7.9	4.2	6.7	8.6	24.8

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

TABLE 27
PERCENTAGE OF COMPANIES WHO HAVE ADDED JOB OPPORTUNITIES DUE TO COMPUTERIZATION

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	160	54	49	41	16
HAVE ADDED JOB OPPORTUNITIES	53.1	40.7	59.2	61.0	56.3
HAVE NOT ADDED JOB OPPORTUNITIES	46.9	59.3	40.8	39.0	43.8

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

TABLE 28

AVERAGE NUMBER OF JOB OPPORTUNITIES CREATED DUE TO COMPUTERIZATION

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	83	22	29	24	8
AVERAGE	3.6	1.8	3.0	4.9	7.1

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

Participants were also asked about training their personnel to use computers (Table 29). Almost eighty percent said that some training was self-initiated with a manual. Training offered by vendors was used by 42.3 percent of companies surveyed, while 18.4 percent used professional services and 14.1 percent brought in consultants.

TABLE 29

WHERE STAFF TRAINED TO USE COMPUTER **

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	163	55	50	42	16
SELF-TAUGHT FROM MANUAL	79.8	85.5	78.0	78.6	68.8
VENDORS OFFERED TRAINING	42.3	32.7	48.0	47.6	43.8
HARDWARE	27.0	20.0	32.0	28.6	31.3
SOFTWARE	31.9	27.3	40.0	28.6	31.3
PROFESSIONAL SERVICES	18.4	9.1	24.0	19.0	31.3
PROGRAMMING	8.6	5.5	12.0	7.1	12.5
APPLICATIONS	12.9	3.6	22.0	11.9	18.8
FOOD WHOLESALERS	30.7	34.5	30.0	35.7	6.3
BROUGHT IN CONSULTANTS	14.1	7.3	16.0	21.4	12.5
OTHER	12.3	14.5	10.0	7.1	25.0

** MULTIPLE RESPONSES ACCEPTED

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

As indicated in Table 30, over 90 percent of companies surveyed used their own personnel for data entry while the remaining 9.2 percent used outside vendors. A slightly lower percentage of smaller companies used their own personnel; 84.8 percent and 88.3 percent for those companies the under \$10 million and \$10 to \$30 million annual sales category respectively.

TABLE 30
DATA ENTRY

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	184	66	60	42	16
USE OWN PEOPLE	90.8	84.8	88.3	100.0	100.0
USE OUTSIDE VENDOR	9.2	15.2	11.7	-	-

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

Table 31 highlights the types of new job opportunities which resulted from computerization. Scanning personnel was the largest category (39.2 percent) followed by data entry (26.6 percent) and DSD Clerk/operator (22.8 percent).

TABLE 31
POSITIONS CREATED DUE TO COMPUTERIZATION **

	TOTAL	TOTAL ANNUAL COMPANY SALES (IN MILLIONS OF DOLLARS)			
		\$ UNDER 10	\$ 10 - 30	\$ 31 - 100	OVER 100
TOTAL	79	21	27	23	8
SCANNING PERSONNEL	39.2	47.6	44.4	30.4	25.0
DATA ENTRY	26.6	14.3	18.5	47.8	25.0
DSD CLERK/OPERATOR	22.8	28.6	25.9	21.7	-
GENERAL CLERK/OPERATOR	17.7	28.6	14.8	17.4	-
ACCOUNTING/BILLING/BOOKKEEPING PERSONNEL	10.1	14.3	14.8	4.3	-
PRICING PERSONNEL	8.9	9.5	11.1	8.7	-
PROGRAMMER/ANALYST	7.6	-	11.1	-	37.5
PAYROLL PERSONNEL	6.3	-	11.1	8.7	-
FRONT END PERSONNEL	2.5	4.8	3.7	-	-
SYSTEMS ANALYST	2.5	-	-	-	25.0
MIS DIRECTOR/MANAGER	2.5	-	-	-	25.0
TECHNICAL ASSISTANT	1.3	-	-	-	12.5
OTHER	22.8	14.3	18.5	30.4	37.5

** MULTIPLE RESPONSES ACCEPTED

NOTE: UNWEIGHTED DATA

SOURCE: COMPUTER USE SURVEY, FOOD MARKETING INSTITUTE, 1987

SAMPLE QUESTIONNAIRE

**Below is a sample of the survey instrument used to
gather the data for the *Computer Use Study***

I. GENERAL INFORMATION

1. HOW MANY supermarkets did your company operate in 1986 (a supermarket is a retail food store with annual sales of at least \$2 million) supermarkets
2. What were your retail supermarket SALES in 1986?\$ million
3. Are you currently using:
 - ☐ Personal computers only (Go to Section II, Page 1)
 - ☐ Mini computers only (Go to Section III, Page 3)
 - ☐ Both (Go to Section II, Page 1)
 - ☐ Neither (Go to Question 33)

II. PERSONAL COMPUTERS (Skip to Section III if only using mini computers)

4. Please list the manufacturer, model, and number (if possible) of all your CENTRAL PROCESSING UNITS (CPU) (i.e., IBM, PC, 4)

<u>MANUFACTURER</u>	<u>MODELS</u>	<u>NUMBER</u>
.....		
.....		
.....		

- 5a. Do you use HARD DISKS for storage?..... ☐ Yes (Go to Question 5b) ☐ No (Go to Question 6)

- 5b. How many and how large are the hard disks? (Choose all that apply)

<u>Size</u>	<u>Number of Hard Disks</u>
☐ 10 megabytes.....	
☐ 20 megabytes.....	
☐ 30 megabytes.....	
☐ other (specify size and number of hard disks)	
..... megabytes.....	
..... megabytes.....	

6. How many computers does your company (enter the number)..... Own computers Lease computers
7. Are your personal computers in your (choose all that apply)..... ☐ Stores ☐ Headquarters
8. Where did you buy your hardware? (Choose all that apply)
 - ☐ Retail computer store ☐ Wholesale computer store ☐ Directly from computer manufacturer
 - ☐ Mail order computer store ☐ Food wholesaler ☐ Other (specify)
- 9a. Please describe any assistance provided by a food wholesaler:
- 9b. What assistance would you have WANTED from the wholesaler:

10a. Do you use a BACK-UP system?.....// Yes (Go to Question 10b) // No (Go to Question 11)

10b. What type of back-up system do you use? (Choose all that apply)

// Magnetic tape // Core memory // Diskettes // Floppy tape // Other _____

10c. On average, how frequently do you make back-up? // Daily // Monthly // Other _____

11. Indicate which areas in your company uses software on the personal computer for these purposes: For example:
Operations: 1. Inventory Control 2. Scheduling 3. Time & Attendance

PURPOSE

Operations

1. _____ 2. _____ 3. _____

Merchandising

1. _____ 2. _____ 3. _____

Human Resources

1. _____ 2. _____ 3. _____

Store Development

1. _____ 2. _____ 3. _____

Financial Resources

1. _____ 2. _____ 3. _____

Scanning

1. _____ 2. _____ 3. _____

12a. Do you use integrated* software?.....// Yes (Go to Question 12b) // No (Go to Question 13a)

* Integrated software is one software package designed to accomplish multiple jobs with the ability to easily exit and enter one function from another. Frequently a common command structure will be used with all functions. For example, Symphony is integrated software that combines word processing, data base management, graphics and communications.

12b. Which software functions are integrated?

13a. Are the personal computers part of a local Area Network (LAN)?// Yes (Go to Question 13b)
// No (Go to Question 14a)

13b. What SOFTWARE is used to connect the personal computers? _____

14a. Are your personal computers linked to a mainframe or mini-computer?.....// Yes (Go to Question 14b)
// No (Go to Question 15a)

14b. Do you transfer data between the personal computer and the mini-computer?

// Yes - Check: // Transfer FROM the mainframe and/or mini ONLY

// Transfer TO the mainframe and or mini ONLY

// Transfer in BOTH directions

// No data transfer at all

15a. Do you have a DATA security system*?.....// Yes (Go to Question 15b) // No (Go to Question 16)

15b. Please describe the DATA security system* _____

16a. Do you have a security system* for your computer HARDWARE?// Yes (Go to Question 16b)
// No (Go to Question 17)

16b. Please describe the security system* for HARDWARE? _____

* A security system only allows access to hardware and/or data to authorized company personnel

17. Which computer application resulted in noticeable improvement in your 1986 profit margin?

III. MINI COMPUTERS

18. Which company manufactured your mini-computer? _____

19. Does your company: /_ / Own /_ / Lease your minicomputer?

20. How many megabytes does your company Use _____ megabytes Actually have _____ megabytes

21. Indicate in which areas your company uses software on the mini computer for these purposes: For example:
Operations: 1. Inventory Control 2. Scheduling 3. Time & Attendance

PURPOSE

Operations 1. _____ 2. _____ 3. _____

Merchandising 1. _____ 2. _____ 3. _____

Human Resources 1. _____ 2. _____ 3. _____

Store Development 1. _____ 2. _____ 3. _____

Financial Resources 1. _____ 2. _____ 3. _____

Scanning 1. _____ 2. _____ 3. _____

22a. Do you use integrated* software? /_ / Yes (Go to Question 22b) /_ / No (Go to Question 23)

* Integrated software is one software package designed to accomplish multiple jobs with the ability to easily exit and enter one function from another. Frequently a common command structure will be used with all functions. For example, Symphony is integrated software that combines word processing, data base management, graphics and communications.

22b. Which functions are integrated in your software? _____

23. How old is your minicomputer system? years

24a. What was the PERCENT of net company sales budgeted for the Information Systems functions or department for 1986? %

24b. What were the actual Information Systems dollars spent for the most recently completed fiscal year as a percent of net company sales? %

25a. Do you have a DATA SECURITY SYSTEM*? /_ / Yes (Go to Question 25b) /_ / No (Go to Question 26a)

25b. Please describe your DATA SECURITY system*? _____

26a. Do you have a security system* for your computer HARDWARE? /_ / Yes (Go to Question 26b) /_ / No (Go to Question 27)

26b. Please describe the security system* for HARDWARE? _____

* A security system only allows access to hardware and/or data to authorized company personnel

- 27a. Do you have a formal disaster recovery plan* that has been reviewed in the last 12 months?
☐ Yes (Go to Question 27b) ☐ No (Go to Question 28)

* A formal plan which outlines policies and procedures to be implemented if the company's or store's information system is destroyed.

- 27b. What type of disaster recovery plan do you use?.....☐ Remote hot site¹ ☐ Remote cold site?
☐ Dual site ☐ Other _____
- 1 A location that is electronically connected to your system
2 A location that is not electronically connected to your system

- 27c. Have you tested the disaster recovery plan in the last 6 months?☐ Yes ☐ No

28. Which computer application resulted in noticeable improvement in your 1986 profit margin?

IV. PERSONNEL

29. How many people regularly have "hands on" use of the computer? ☐ Headquarters _____ people ☐ Store _____ people
- 30a. Have you ADDED job opportunities due to increased computerization?.....☐ Yes (Go to Question 30b)
☐ No (Go to Question 31)
- 30b. Indicate the number of job opportunities that were created due to computerization?..... _____ people
31. Identify the ADDITIONAL positions that were created due to computerization?

32. Who TRAINED your staff to use the computer? (Choose all that apply)
☐ Self-taught from software or hardware manual ☐ Food Wholesalers
☐ Vendors offered training: ☐ hardware ☐ software ☐ Brought in consultant(s)
☐ Professional services: ☐ Programming ☐ Applications
☐ Other (specify) _____
33. For data entry does your company:....☐ Use own people; how many _____ ☐ Use outside vendor
34. For which three subjects or issues would you like additional advice or information?
1. _____
2. _____
3. _____



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1750 K Street, NW Washington, DC 20006
202/452-8444 TELEX: 892722 FMI USA WSH